

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

**EP 1 080 641 A3**

(12)

**EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:

30.05.2001 Bulletin 2001/22

(43) Date of publication A2:

07.03.2001 Bulletin 2001/10

(21) Application number: 00117445.7

(22) Date of filing: 11.08.2000

(51) Int. Cl.<sup>7</sup>: **A01N 59/00**, A01N 43/90,

A01N 43/80, A01N 57/34,

A01N 33/24

// (A01N59/00, 57:34, 43:90,

43:80, 33:24)

(84) Designated Contracting States:

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE

Designated Extension States:

AL LT LV MK RO SI

(30) Priority: 12.08.1999 US 373288

(71) Applicant:

**NALCO CHEMICAL COMPANY**

Naperville Illinois 60563-1198 (US)

(72) Inventors:

- Cooper, Andrew J.  
Oswego, IL 60543 (US)

• Dallmier, Anthony W.

Aurora, IL 60504 (US)

• Kelly, Robert F.

Oswego, IL 60543 (US)

• McCoy, William F.

Naperville, IL 60540 (US)

• Ma, Xi

Oswego, IL 60543 (US)

(74) Representative:

Ebner von Eschenbach, Jennifer et al

c/o Ladas & Parry,

Dachauerstrasse 37

80335 München (DE)

(54) **Composition and method for controlling biological growth using stabilized sodium hypobromite in synergistic combinations**

(57) A synergistic composition and method for controlling biological growth in industrial fluids are disclosed, wherein the composition comprises stabilized sodium hypobromite and at least one compound selected from the group consisting of coco alkyl dimethylamine oxide, n-coco alkyl trimethylenediamine, tetraalkyl phosphonium chloride, 7-oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid and 4,5-dichloro-2-n-octyl-4-isothiazoline-3-one.

**EP 1 080 641 A3**



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number

EP 00 11 7445

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IntCl.7)
X	EP 0 913 091 A (NALCO CHEMICAL CO) 6 May 1999 (1999-05-06) * paragraphs '0018!', '0019!', '0025!'-'0028!'; claims 15,16 *	1-15	A01N59/00 A01N43/90 A01N43/80 A01N57/34 A01N33/24
X	EP 0 471 481 A (BETZ EUROPE, INC) 19 February 1992 (1992-02-19) * page 2, line 1-21 *	1-10,12, 13	/(A01N59/00, 57:34,43:90, 43:80,33:24)
Y	* page 3, line 3-21; tables V-VI *	11,15	
X	WO 96 14092 A (GRACE W R & CO) 17 May 1996 (1996-05-17) * page 3, line 21 - page 4, line 8 *	1-10,12, 13	
Y	* page 5, line 3 - page 6, line 9 *	11,15	
Y	US 5 468 739 A (WHITEKETTLE WILSON K ET AL) 21 November 1995 (1995-11-21) * column 3, line 52 - column 4, line 65 *	11	
Y	EP 0 479 405 A (NALCO CHEMICAL CO) 8 April 1992 (1992-04-08) * the whole document *	11,15	TECHNICAL FIELDS SEARCHED (IntCl.7)
A	WO 99 06320 A (NALCO CHEMICAL CO) 11 February 1999 (1999-02-11) * page 7, line 1-20 * * page 11, paragraph 3 - page 13, paragraph 1 * * page 18, paragraph 3 - page 19, paragraph 2 *	1-15	A01N
The present search report has been drawn up for all claims			
Place of search <b>MUNICH</b>		Date of completion of the search <b>5 April 2001</b>	Examiner <b>Klaver, J</b>
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03/82 (P04C01)



European Patent  
Office

Application Number

EP 00 11 7445

### CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

### LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☒ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



European Patent  
Office

LACK OF UNITY OF INVENTION  
SHEET B

Application Number

EP 00 11 7445

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1 - 13 (all partial)

Synergistic compositions of stabilized sodium hypobromite and a compound selected from cocoalkyl dimethylamine oxide and N-cocoalkyl trimethylene diamine and methods of using these compositions.

2. Claims: 1 - 13 (all partial)

Synergistic composition of stabilized sodium hypobromite and tetra alkyl phosphonium chloride and methods of using this composition.

3. Claims: 1 - 13 (all partial)

Synergistic composition of stabilized sodium hypobromite and 7-oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid and methods of using this composition.

4. Claims: 1 - 13 (all partial)

Synergistic composition of stabilized sodium hypobromite and 4,5-dichloro-2-n-octyl-4-isothiazoline-3-one and methods of using this composition.

5. Claims: 14,15

Synergistic combinations of stabilized hypobromite and a second biocide as defined by claim 14 and a method of controlling microbiological growth as defined by claim 15.

The application lacks unity within the meaning of Article 82 EPC for the following reasons:

The common concept linking together the compositions as defined by present claims 1 and 14 is the synergistic effect between the stabilized sodium hypobromite on the one hand and the second biocidal ingredient on the other. However, synergistic compositions for controlling biological growth in industrial aqueous systems comprising stabilized sodium hypobromite are known from EP 913 091 A1 (= D1). This document discloses such combinations in which the second biocidal agent is either a mixture of 5-Cl-2-Me-4-isothiazolin-3-one and 2-Me-4-isothiazolin-3-one or one of the compounds mentioned in claim 14 of the present application (see D1, page 4, paragraphs 0025-0028 and claims 14 and 16).

The second biocidal ingredients of the various synergistic combinations of the application differ structurally substantially. The various embodiments of the present application (inventions number 1 - 5) hence are not linked by a novel common general inventive concept, contrary to the requirements of Art. 82 EPC.

Since the search could be completed without additional work, the applicant was not invited to pay additional search fees (Guidelines B



European Patent  
Office

**LACK OF UNITY OF INVENTION  
SHEET B**

Application Number

EP 00 11 7445

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

VII 2.3).

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 11 7445

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

05-04-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0913091 A	06-05-1999	US 5922745 A	13-07-1999
		AU 9046898 A	20-05-1999
		BR 9804352 A	08-03-2000
		JP 11255610 A	21-09-1999
		ZA 9809875 A	05-05-1999
EP 0471481 A	19-02-1992	US 5063212 A	05-11-1991
		US 5063213 A	05-11-1991
		US 5063215 A	05-11-1991
		US 5063218 A	05-11-1991
		US 5063216 A	05-11-1991
		US 5063211 A	05-11-1991
		US 5063214 A	05-11-1991
		US 5063217 A	05-11-1991
		US 5010066 A	23-04-1991
		AT 147939 T	15-02-1997
		AT 175310 T	15-01-1999
		CA 2048935 A	14-02-1992
		DE 69124313 D	06-03-1997
		DE 69124313 T	19-06-1997
		DE 69130743 D	18-02-1999
		DE 69130743 T	27-05-1999
		EP 0743002 A	20-11-1996
		ES 2095917 T	01-03-1997
		ES 2126359 T	16-03-1999
		FI 913836 A	14-02-1992
		PT 98649 A, B	30-06-1992
WO 9614092 A	17-05-1996	AU 696309 B	03-09-1998
		AU 4014795 A	31-05-1996
		BR 9509598 A	06-01-1998
		CA 2204279 A	17-05-1996
		CZ 9701354 A	13-08-1997
		EP 0789595 A	20-08-1997
		FI 971852 A	30-04-1997
		JP 10509141 T	08-09-1998
		NO 972002 A	02-07-1997
		NZ 296363 A	29-04-1999
US 5468739 A	21-11-1995	CA 2156443 A	01-05-1996
EP 0479405 A	08-04-1992	US 5141754 A	25-08-1992
		AT 116271 T	15-01-1995
		AU 639315 B	22-07-1993
		AU 7536591 A	02-04-1992
		CA 2038003 A	02-04-1992

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 11 7445

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

05-04-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0479405 A		DE 69106303 D	09-02-1995
		DE 69106303 T	20-07-1995
		JP 6063569 A	08-03-1994
		US 5209934 A	11-05-1993
WO 9906320 A	11-02-1999	US 5942126 A	24-08-1999
		AU 8506098 A	22-02-1999
		BR 9806044 A	08-09-1999
		CN 1273560 T	15-11-2000
		EP 0929500 A	21-07-1999
		JP 2001501869 T	13-02-2001
		NO 990679 A	01-06-1999
		US 6136205 A	24-10-2000
		ZA 9806669 A	04-02-1999

**THIS PAGE BLANK (USPTO)**